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|-------------------------------|------------------------|---------------------|--|
| Notice of Allowability | Application No. | Applicant(s) | |
| | 10/604,018 | SU, TUNG-MING | |
| | Examiner | Art Unit | |
| | Quochien B. Vuong | 2685 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 06/22/2003.
2. ☒ The allowed claim(s) is/are 1-18.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).**
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|---|--|
| <ol style="list-style-type: none"> 1. <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) 3. <input checked="" type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date <u>10/17/03</u> 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit of Biological Material | <ol style="list-style-type: none"> 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) 6. <input type="checkbox"/> Interview Summary (PTO-413), Paper No./Mail Date _____ 7. <input type="checkbox"/> Examiner's Amendment/Comment 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance 9. <input type="checkbox"/> Other _____ |
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Reasons for Allowance

1. Claims 1-18 are allowed over the cited prior art.

2. The following is an examiner's statement of reasons for allowance:

regarding independent claims 1 and 16, Lin (US Patent Application Publication 2004/0002315) discloses a harmonic passive mixer (paragraph [0059]); and Zhou (US 6,847,808) discloses a passive mixer (figure 6) for outputting a differential baseband signal according to a differential RF signal received from a first input node (101) and a second input node (103), comprising: a first switch pair (M1-M5) for selectively connecting a first input node (101) to a first output node (105) depending on a first differential local oscillator signal, a second switch pair (M6-M2) for selectively connecting the first input node (101) to a second output node (107) depending on the differential local oscillator signal, a third switch pair (M3-M7) for selectively connecting a second input node (103) to the first output node (105) depending on the differential local oscillator signal; and a fourth switch pair (M8-M4) for selectively connecting the second input node (103) to the second output node (107) depending on the differential local oscillator signal; wherein the first and the second input nodes are for receiving the differential RF signal (RF In) and the first and the second output node are for outputting the differential baseband signal (baseband out) (column 7, line 9 – column 8, line 17). However, Lin and Zhou fail to teach or fairly suggest the harmonic passive mixer wherein the second switch pair for selectively connecting the first input node to a second output node depending on a second differential local oscillator signal, and the third switch pair for selectively connecting a second input node to the first output node

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depending on the second differential local oscillator signal; wherein the frequency of each of the first differential local oscillator signal and the second differential local oscillator signal is half of the frequency of the differential RF signal; and wherein the phase of the first differential local oscillator signal and that of the second differential local oscillator signal are shifted by 90 degrees.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Information Disclosure Statement

3. The information disclosure statement (IDS) submitted on 10/17/2003 is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Conclusion

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Wyse (US 6,230,001) discloses active commutated double balanced mixer.

Lee et al (US 6,892,062) disclose current-reused bleeding mixer.

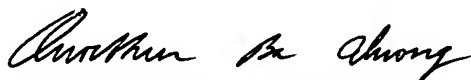
Kluge et al. (US 6,937,849) disclose mixing apparatus.

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5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Quochien B. Vuong whose telephone number is (571) 272-7902. The examiner can normally be reached on M-F 9:30-18:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Urban can be reached on (571) 272-7899. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Quochien B. Vuong
Sep. 18, 2005.

QUOCHIE B. VUONG
PRIMARY EXAMINER